CLAIMS

What is claimed is:

1. A method for testing a SAS component in situ in a SAS domain, the method comprising:

generating a stimulus representing an anomalous condition within a first SAS component;

applying the stimulus to a second SAS component coupled to the first SAS component;

receiving within the first SAS component a response from the second SAS component; and

verifying within the first SAS component the received response.

2. The method of claim 1 wherein the first SAS component is a SAS device controller and the second SAS component is a SAS expander.

3. The method of claim 1 wherein the first SAS component is a SAS expander and the second SAS component is a SAS device controller.

4. The method of claim 1 wherein the step of generating comprises generating an exception primitive.

5. The method of claim 4 wherein the step of generating an exception primitive comprises generating at least one of: BREAK, BROADCAST, NAK, and ERROR.

6. The method of claim 1 wherein the step of generating comprises generating invalid frames.

7. The method of claim 6 wherein the step of generating invalid frames comprises generating at least one of: a frame with a CRC error, an invalid SMP Response frame, an illegal frame type, a frame with an invalid SAS address, a frame representing an invalid SAS protocol a frame indicating an invalid connection rate, a character representing an invalid primitive, and a frame with an invalid SMP function.

15

8. The method of claim 1 further comprising:

configuring the first SAS component to enable testing operation.

9. The method of claim 8 wherein the step of configuring comprises:

transmitting an SMP Request to the first SAS component requesting that the first SAS component commence testing operation of the second SAS component.

10. The method of claim 9 wherein the SMP Request is a vendor specific SMP Request.

11. A system comprising:

a SAS communication medium;

a first SAS component coupled to the SAS communication medium;

a second SAS component coupled to the SAS communication medium wherein the second SAS component is adapted to generate a stimulus representing an anomalous condition and wherein the second SAS component is further adapted to apply the generated stimulus to the first SAS component.

12. The system of claim 11 wherein the second SAS component is further adapted to verify a response received from the first SAS component in response to the generated stimulus applied to the first SAS component.

13. The system of claim 11 wherein the first SAS component is a SAS device controller and the second SAS component is a SAS expander.

14. The system of claim 11 wherein the first SAS component is a SAS expander and the second SAS component is a SAS device controller.

15. The system of claim 11 wherein the second SAS component is adapted to selectively enable generation of the stimulus.

16. The system of claim 15 wherein the second SAS component is selectively enabled to generate the stimulus in response to a vendor specific SMP Request received by the second SAS component.

17. A system for testing a SAS component in situ in a SAS domain, the system comprising:

means for generating a stimulus representing an anomalous condition within a first SAS component;

means for applying the stimulus to a second SAS component coupled to the first SAS component;

means for receiving within the first SAS component a response from the second SAS component; and

means for verifying within the first SAS component the received response.

18. The system of claim 17 wherein the first SAS component is a SAS device controller and the second SAS component is a SAS expander.

19. The system of claim 17 wherein the first SAS component is a SAS expander and the second SAS component is a SAS device controller.

20. The system of claim 17 further comprising:

means for configuring the first SAS component to enable testing operation.

21. The system of claim 20 wherein the means for configuring comprises:

means for transmitting an SMP Request to the first SAS component requesting that the first SAS component commence testing operation of the second SAS component.

22. The system of claim 21 wherein the SMP Request is a vendor specific SMP Request.